

REFERENCE 11

MEMORANDUM

DATE: June 15, 2015

TO: Division File

FROM: Lance Range, Environmental Protection Specialist, Illinois EPA

SUBJECT: Documentation of the Wetland Frontage with the Old Cahokia Creek Wetland for the Old American Zinc site.

SITE NUMBER: 1630505007
Fairmont City, Illinois
Old American Zinc Plant
Superfund/HRS

Wetland Frontage Calculations and Notes

A Probable Point of Entry (PPE) to the surface water pathway has been identified within the Old Cahokia Creek Wetland at the point where surface water flow from West Ditch 1 enters the wetland. The PPE is the point where the overland segment reaches an eligible surface water body (Ref. 1, Section 4.1.1.1). The furthest point within the Old Cahokia Creek wetland where contamination has been documented is sampling point SD-48, which has been determined to be 231 feet from the PPE. The distance from the PPE to sampling point SD-46 is 170 feet. The distance from the PPE to sampling point SD-34D is 307 feet. This distance was established using the GIS measuring tool contained within ARCGIS 10.2 program. The contaminants present within SD-48 were documented in the 2009 Remedial Investigation report (ENTACT, 2009). GPS coordinates for the sampling locations were provided by ENTACT.

As described on page 337 of OSWER Directive 9345.1-07, Wetlands where the PPE into the surface water body is the wetland, the perimeter of the wetland is used for wetland length rather than the frontage contiguous with the in water segment of the hazardous substance migration path. To error on the side of caution (thus a smaller perimeter of wetland), a circle with a radius of 231 feet was drawn using ARCGIS editing tools so that the midpoint of the circle was the PPE, and the perimeter of the circle intersected with point SD-48. This graphic was then converted to a feature in ARCMAP.

The output feature was then clipped to the Wetland Inventory 2010 layer so that only parts of the circle contained within the Wetland Inventory 2010 layer remained. This result can be seen in Figure 8, to the right. Measurement tools within the ARCGIS 10.2 program were then used to quantify the perimeter of the remaining shapefile. The calculated wetland frontage (based on the measured perimeter) is 1,261.6 feet.

References

ENTACT, 2009. Final Remedial Investigation Report for the Old American Zinc Plant Site. Fairmont City, Illinois. Revision 2, March 13, 2009. Prepared by ENTACT: 1010 Executive Court, Westmont, Illinois. [4694 pages]

Illinois State Geological Survey. Prairie Research Institute. University of Illinois at Urbana-Champaign. Illinois Geospatial Data Clearing House. Access 2005 DOQQ files for Illinois by County Universal Transverse Mercator (UTM) Zones 15 and 16, St. Clair, Monks Mound Quadrangle, SW section. <http://www.isgs.uiuc.edu/nsdihome/webdocs/doq05/county/stclair.html>. Accessed on June 15, 2015.

ESRI, 2014. ArcGIS Map Service: World Imagery, Online Map Images. Electronic data maintained by ESRI including imagery from DigitalGlobe, GeoEye, i-cubed, USDA FSA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community.

High Resolution Imagery provided by DigitalGlobe.

At <http://www.arcgis.com/home/item.html?id=10df2279f9684e4a9f6a7f08febac2a9>.

Accessed on March 19, 2014.

U.S. Fish and Wildlife Service (USFWS), 2010. National Wetlands Inventory. At

<http://www.fws.gov/wetlands/Data/State-Downloads.html>. Accessed on March 26, 2014.

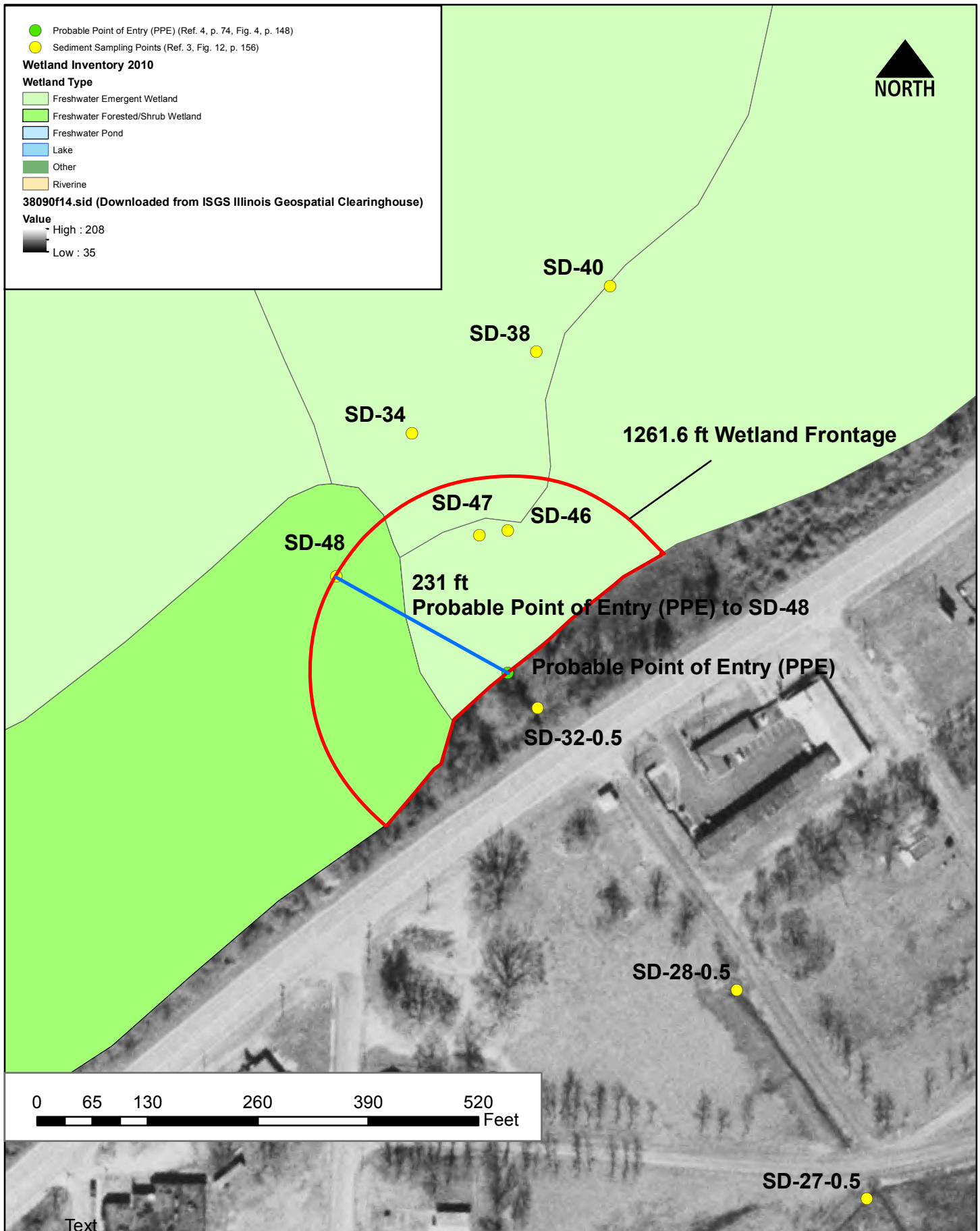
United States Environmental Protection Agency, Office of Solid Waste and Emergency Response (OSWER) Hazard Ranking System Guidance Manual, Publication 9345.1-07, PB92-96337,

EPA 540-R-92-026, November 1992. <http://www.epa.gov/superfund/sites/npl/hrsres/#HRS> Guidance.

<http://www.epa.gov/superfund/sites/npl/hrsres/hrsgm/ch8b.pdf>. Accessed on June 15, 2015.

Figure 8

Cahokia Creek Wetland Sampling Points and Frontage



Illinois State Geological Survey, <http://www.isgs.uiuc.edu/nsdihome/webdocs/doq05/county/stclair.html> (Monks Mound quadrangle, SW section), accessed on 15 June 15. National Wetland Inventory Map (<http://www.fws.gov/wetlands/data/mapper.HTML>) accessed on June 15, 2015. Ref. 11. The Probable Point of Entry (PPE) is the point where the overland segment reaches an eligible surface water body (Ref. 1, Section 4.1.1.1).